

## 2SD1085(K)

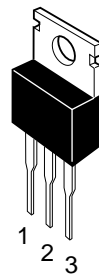
Silicon NPN Triple Diffused  
High Voltage Switching, Igniter

### Absolute Maximum Ratings (Ta = 25°C)

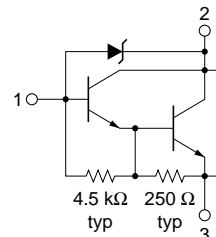
Item	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	300	V
Collector to emitter voltage	$V_{CEO}$	300	V
Emitter to base voltage	$V_{EBO}$	7	V
Collector current	$I_C$	3	A
Collector peak current	$i_{C(peak)}$	6	A
Collector power dissipation	$P_C^{*1}$	40	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

Note: 1. Value at  $T_C = 25^\circ\text{C}$ .

TO-220AB



1. Base
2. Collector (Flange)
3. Emitter

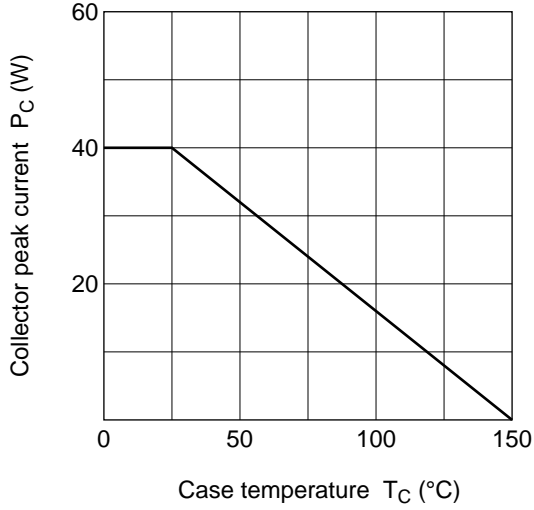


### Electrical Characteristics (Ta = 25°C)

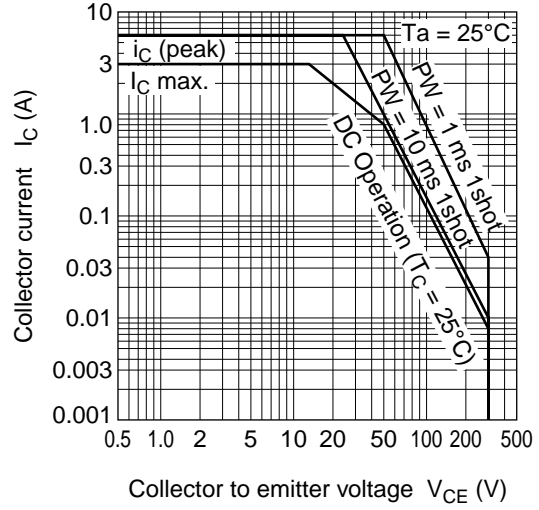
Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage	$V_{(BR)CBO}$	300	—	500	V	$I_C = 0.1 \text{ mA}, I_E = 0$
Collector to emitter sustain voltage	$V_{CEO(sus)}$	300	—	—	V	$I_C = 2 \text{ A}, PW = 50 \mu\text{s}, f = 50 \text{ Hz}, L = 10 \text{ mH}$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 50 \text{ mA}, I_C = 0$
Collector cutoff current	$I_{CEO}$	—	—	100	$\mu\text{A}$	$V_{CE} = 300 \text{ V}, R_{BE} = \infty$
DC current transfer ratio	$h_{FE}$	500	—	—		$V_{CE} = 2 \text{ V}, I_C = 2 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	$I_C = 2 \text{ A}, I_B = 20 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	2.0	V	
Turn on time	$t_{on}$	—	1.0	—	$\mu\text{s}$	$I_C = 2 \text{ A}, I_{B1} = -I_{B2} = 20 \text{ mA}$
Turn off time	$t_{off}$	—	22	—	$\mu\text{s}$	

Note: 1. Pulse Test.

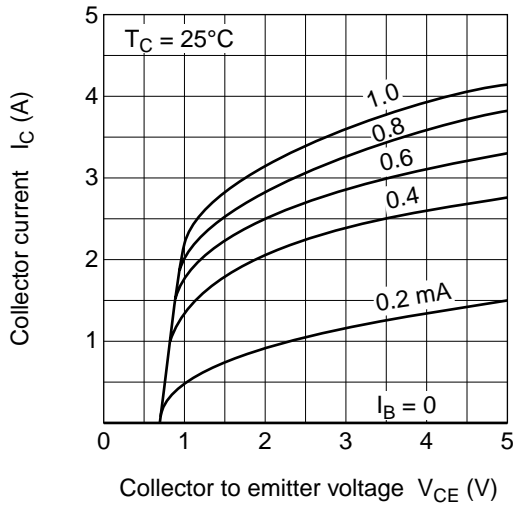
Maximum Collector Dissipation Curve



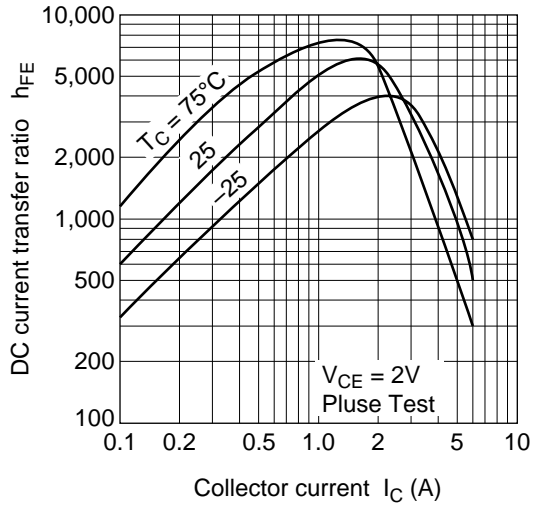
Area of Safe Operation



Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current



Saturation Voltage vs. Collector Current

